

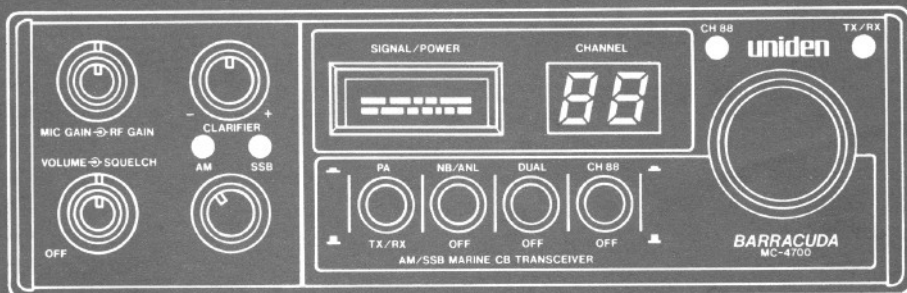
uniden®

# MC-4700

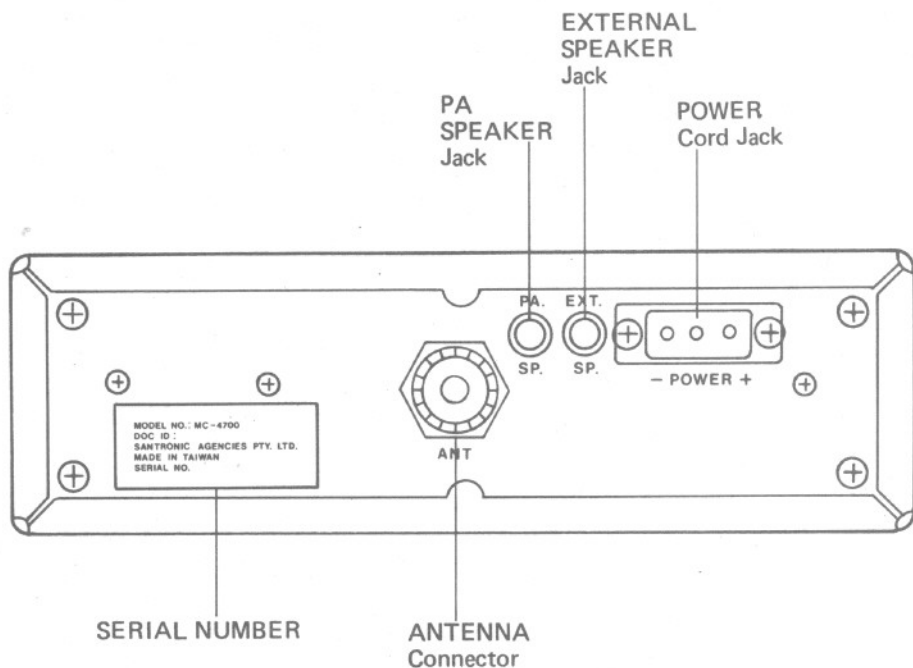
10 Channel  
Marine  
AM/SSB Transceiver

# OWNER'S MANUAL

# BARRACUDA



## RADIO BACK PANEL VIEW



### IMPORTANT!

This above pictorial display shows the location of the various accessory, antenna, and power receptacles, as well as the SERIAL NUMBER.

You are urged to record your model number and your SERIAL NUMBER in the spaces provided below:

Model \_\_\_\_\_

SERIAL NUMBER \_\_\_\_\_

## SPECIFICATIONS

### GENERAL

Channels	10 AM, 10 USB
Frequency Range	27.680 to 27.980 MHz
Frequency Control	Phase Locked Loop(PLL) synthesized circuitry
Frequency Tolerance	±0.005%
Frequency Stability	0.001%
Operating Temperature Range	-20°C to +50°C
Microphone	Plug-in type, dynamic with push-to-talk switch and coiled cord
Input Voltage	13.8V DC nominal, 15.9V max., 11.7V min. (positive or negative ground).
Current Drain	Transmit: AM full mod., 2.2A; SSB 12 watts PEP output, 2A. Receiver: AM & SSB with maximum audio output, 0.6A.
Cabinet Dimensions (mm)	185(W) x 231(D) x 58(H)
Weight	3.3 Lbs (1.52 kg)
Antenna Connector	UHF, SO-239
Meter	Illuminated; indicates relative power output and received signal strength, green receive LED.
Indicators	LED display; channel, channel 88, TX/RX and AM/SSB.

### TRANSMITTER

Power output	AM, 4 watts SSB, 12 watts, P.E.P.
Modulation	AM, high and low level
Intermodulation Distortion	SSB: 3rd and 5th order, better than -25 dB. 7th and 9th order, better than -35 dB.
SSB Carrier Suppression	Better than -55 dB
Unwanted Sideband	Better than -50 dB
Frequency Response	AM and SSB: 350 to 2500 Hz.
Output Impedance	52 ohms, unbalanced
SSB Filter	10.695 MHz, 8 pole monolithic type 6 dB @ 4.2 kHz 60 dB @ 7.0 kHz
Output Indicators	Meter shows relative RF output power; red transmit LED.

## RECEIVER

Sensitivity	SSB: Better than $.25\mu\text{V}$ for 10 dB (S+N)/N at greater than $\frac{1}{2}$ watt of audio output AM: Better than $.5\mu\text{V}$ for 10 dB (S+N)/N at greater than $\frac{1}{2}$ watt of audio output
Selectivity	SSB and AM: 6 dB @ 4.2 kHz, 60 dB @ 7.0 kHz
Cross Modulation	More than 50 dB
Image Rejection	More than 75 dB
I.F. Frequency	AM and SSB: 10.695 MHz
AM and SSB RF Gain Control	Adjustable for optimum signal reception.
Automatic Gain Control	(AGC): Less than 10 dB change in audio output for inputs from 10 to 500,000 microvolts.
Squelch	Adjustable; threshold less than $.5\mu\text{V}$ .
Noise Blanker	RF type, effective on AM and SSB.
Clarifier Range	$\pm 1.0$ kHz Max
Audio Output Power	3 watts into 8 ohms
Frequency Response	350 to 2500 Hz
Distortion	Less than 10% at 3 watts output.
Built-in Speaker	16 ohms, round
External Speaker (Not Supplied)	8 ohms; disables internal speaker when connected.

## PA SYSTEM

Power Output	3 watts into external speaker.
External Speaker for PA	8 ohms (not supplied)

## INTRODUCTION

Santronic has combined superb workmanship and modern styling with the very latest state-of-art circuitry to bring you Barracuda. It has been especially designed to give you maximum performance and reliability. Your Barracuda is completely factory aligned and quality assurance tested.

To obtain the maximum benefit and pleasure from your Barracuda please read very carefully the contents of this manual before attempting to install or operate the transceiver.

## FEATURES

- **ALL SOLID STATE:** IC and Transistorized construction, with low current drain, for a long, trouble-free life.
- **LARGE LED CHANNEL DISPLAY:** Channel number is displayed by use of LED (light emitting diode) display for ease of channel selection.
- **CLEAN SIGNAL:** Transmitter audio processing circuitry produces a clean signal with maximum legal modulation, for best range.
- **QUIET RECEPTION:** Effective squelch and automatic noise limiter and an RF noise blanker for superior quieting.
- **EFFECTIVE AGE:** Receiver amplified automatic gain control (AGC) reduces the effect of differences in received signal strengths. No distracting "blasting" and "fading" of signals.
- **AN EFFICIENT TRANSMITTER:** Provides 4 watts on AM and 12 watts on SSB to the antenna.
- **PUBLIC ADDRESS FUNCTION:** Useful for paging and announcements.
- **DUAL-COLOR LED MODE INDICATOR:** Green for AM mode and Red for SSB (USB) mode.
- **EMERGENCY CH88 SWITCH:** This switch enables you to select emergency channel (CH88) regardless of the channel selector switch setting.

## CHANNEL INFORMATION

Channel	Channel Frequency in MHz
68	27.680
72	27.720
82	27.820
86	27.860
88	27.880

Channel	Channel Frequency in MHz
90	27.900
91	27.910
94	27.940
96	27.960
98	27.980

The units would have to be returned to Santronic to effect channel changes, etc.

To insure that you obtain the maximum performance from this radio, please read carefully the following descriptions and operating instructions.

**NOTE:** This radio has been designed for operation in the 11 meter Marine Band Radio Service. It uses a frequency synthesizing circuit with Phase Locked

Loop(PLL) techniques to provide crystal controlled transmit and receive operation on all 10 channels. The PLL circuitry assures ultraprecise frequency control. It is designed to meet the Department of Communications requirements applicable to equipment operating in the Inshore Boating Radio Communication Service, and is not to be used for any other purpose, RB244 of the D.O.C. regulations defines operation in this service, and you are required to read and understand these regulations prior to operating this equipment.

## INSTALLATION

### Location

Plan the location of the transceiver and microphone bracket before starting the installation. Select a location that is convenient for operation and does not interfere with the driver or passenger in the vehicle. In automobiles, the transceiver is usually mounted to the dash panel with the microphone bracket beside it.

### Mounting and Connection

This radio is supplied with a universal mounting bracket. The transceiver is held in the bracket by the two thumb screws supplied, permitting adjustment to the most convenient angle. The bracket must be mounted with the machine screws supplied. The mounting surface must be mechanically strong. Proceed as follows to mount the transceiver:

1. After you have determined the most convenient location in your vehicle, hold the radio with mounting bracket in the exact location desired. If nothing interferes with mounting it in the desired position, remove the mounting bracket bolts. Before drilling the holes, make sure nothing will interfere with the installation of the mounting bolts.
2. Connect the antenna cable plug to the standard receptacle on the rear panel. Most CB antennas are terminated with a type PL-259 plug which mates with the receptacle on the rear panel.
3. Connect the DC power input wire with the fuse (red) to +12V DC. This wire extends from a plug which connects to the rear panel.  
This prevents the set being left on accidentally when all persons leave the vessel and also permits operating the radio without the engine running.

**NOTE:** See ground connection under **GENERAL INFORMATION** for more detail.

4. Connect the black wire to ground. Consult a marine electrician if in doubt. Any convenient location with good electrical contact may be used. (remove paint).
5. Mount the microphone hanger on the side of the unit or near the unit, using two screws supplied. When mounting in a boat, place the hanger on the dash so the microphone is easily accessible.

## **GENERAL INFORMATION**

### **GROUND CONNECTION**

This radio may be installed and used in any 12V DC negative or positive ground system.

1. Negative ground system: Connect the Red power lead from the radio to the positive or (+) battery terminal or other convenient point, and connect the Black power lead to the chassis or vehicle frame or (-) battery terminal.
2. Positive ground system: In the case of positive ground system, connect the Black power lead from the radio to the negative or (-) battery terminal or other convenient point, and connect the Red power lead to the chassis or vehicle frame or (+) battery terminal.

### **ANTENNA**

This radio is designed to operate into a 52 ohm RADIO antenna. Best results will be obtained from your transceiver if you use a good antenna, properly installed.

A vertically polarized quarter-wavelength whip antenna provides the most reliable operation and greater range. The shorter loaded-type whip antennas are more attractive, compact and adequate for applications where the maximum possible distance is not required. Also, the loaded whip antennas do not present the problems of height imposed by the full quarter-wavelength whip.

Whip antennas utilize the metal body of the vehicle as a ground plane. When mounted on a corner of the vehicle, they are slightly directional, in the direction of the body of the vehicle. For all practical purposes, however, the radiation pattern is non-directional. A slight directional characteristic will be observed only at extreme distances. A standard antenna connector (Type SO-239) is provided on the transceiver for easy connection to a standard PL-259 cable termination.

When installed in a boat, the transceiver will perform most efficiently when antenna

used has been specifically designed for marine applications.

Before installing the transceiver in a boat, consult your dealer for information regarding an adequate grounding system and prevention of electrolysis between fittings in the hull and water.

### **AC OPERATION**

To operate the transceiver from AC current as the power source, you will require a separate power supply capable of supplying 2.5 amps at a 13.8V DC output with a nominal input voltage of 240 volts AC, 50/60 Hz. Simply connect the red (+) and black (-) leads of the transceiver to the corresponding DC terminals of the power supply.

**NOTE:** Do not attempt to operate this transceiver by connecting directly to 240V AC.

### **REMOTE SPEAKER**

The external speaker jack (EXT. SPKR) on the rear panel is used for remote receiver monitoring. The external speaker should have 8 ohms impedance. When the external speaker is plugged in, the internal speaker is disconnected.

### **PUBLIC ADDRESS**

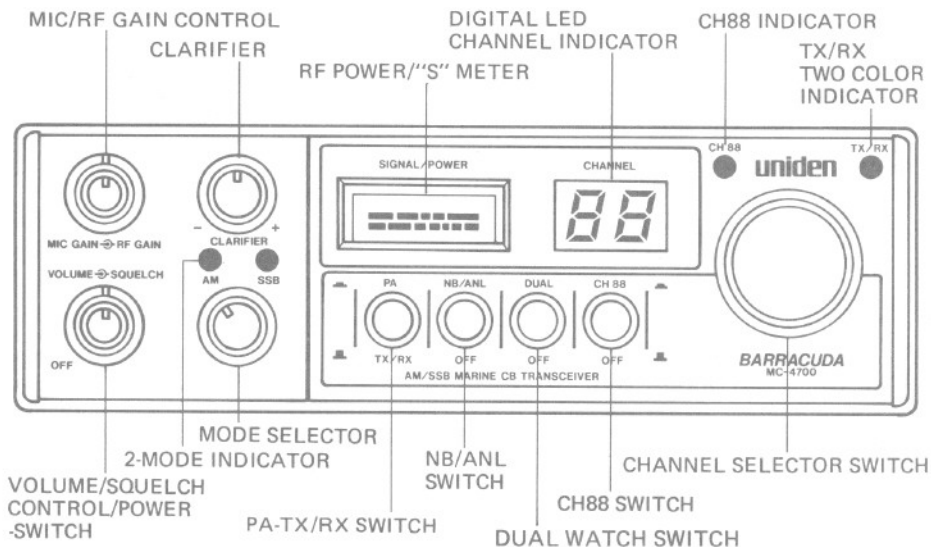
An external 8 ohm 4-watt speaker must be connected to the (PA SPKR) jack located on the rear panel when the transceiver is used as a public address system. The speaker should be directed away from the microphone to prevent acoustic feedback. Physical separation or isolation of the microphone and speaker is important when operating the PA at high output levels.

## **OPERATING INSTRUCTIONS**

Barracuda operates on 10 AM channels and 10 Upper Side Band channels.

When you receive the SSB signal in the proper mode, audio sound may be either too high pitched or low pitched, indicating that your receiver may not be tuned to the exact same frequency as the transmitter to which it is listening. The Barracuda is equipped with a Clarifier. By tuning the Clarifier, you can slightly change the frequency of the receiver, so you get a normal tone.





## OPERATING CONTROLS

Your Barracuda designed for ease of operation, is provided with the following operating controls:

- 1. OFF/ON VOLUME:** To turn the transceiver on, rotate the control clockwise past click. To turn the transceiver off, rotate the control counterclockwise past click. Rotate the control clockwise for a comfortable audio volume level.
- 2. CHANNEL SELECTOR:** This switch is used to select any one of the 10 Marine Band channels. Channel 88 has been reserved by the D.O.C. for emergency communications involving the immediate safety of life of individuals or immediate protection of property. Channel 88 may also be used to render assistance to a seafarer.
- 3. MODE SELECTOR:** This switch selects AM or SSB (USB) mode of operation. This selector changes the mode of operation of both transmitter and receiver simultaneously.  
Set the selector to the mode on which you wish to communicate. For easier identification of the mode, LED mode indicator is provided in two different colors, green for AM and red for SSB (USB).
- 4. SQUELCH:** The squelch control is normally set to a position which just eliminates undesired background noise with no signal present. With the audio volume adjusted to a satisfactory level, rotate the Squelch control clockwise to the point where the sound from the speaker is cut off. In this position, there will be no sound from the speaker until a signal is received. In order to hear weak signals, it may be necessary to rotate the Squelch control counterclockwise, allowing some background noise to be heard.

5. **CLARIFIER:** The clarifier is normally set to the center position. This feature has several uses and can greatly enhance receiver operation. If a receive signal is slightly off frequency, this control can be operated to optimize the receive signal. This control is primarily intended to tune in SSB signals, but, it may be also used to optimize the AM signal.
6. **MIKE GAIN:** This control is used to adjust, as required, microphone input sensitivity for optimum amount of modulation in transmit. UNIDEN's marine band transceivers have been designed to permit the user to attain levels of modulation up to 100% depending on the setting of the microphone gain control, using the microphone provided with the unit. UNIDEN's automatic compression and peak limiting circuits assure maximum modulation with minimum distortion.
7. **DUAL WATCH BUTTON:** Provides for automatic monitoring of channel 88. Push "DUAL" button and the watch is set. Now select any other legal channel and every second the receiver will leave the main channel and sample activity on Channel 88. If activity is found, receiver will remain on Channel 88 until message is complete. Channel 88 thus has priority over the main channel. To disable the watch function, push "DUAL" Button. Whilst in DUAL position, please note that transmitter is not available to transmit, push CH88 switch.
8. **CH88 SWITCH:** This switch is for use when emergency communication is needed on the emergency channel, CH88, Pressing the CH88 switch activates CH88 regardless of the position of the channel selector switch. When CH88 switch is pressed, the channel display is blanked and the CH88 indicator is activated.
9. **PA-TX/RX SWITCH:** This control engages the PA function. The PA function should not be used unless an external speaker is connected. In the TX/RX position, the PA function is disabled and the radio will transmit and receive on the selected channel.
10. **NB/ANL SWITCH:** When the switch is placed in the NB/ANL position, both RF Noise Blanker and Automatic Noise Limiter circuits are activated. The NB is very effective for repetitive impulse noise such as ignition noise. The ANL reduces annoying hash-type noises.
11. **RF GAIN:** This control is used primarily to optimize reception in strong signal areas. Gain is reduced by counterclockwise rotation of the control.

#### **INDICATOR FUNCTION**

1. **S/RF METER:** This meter displays relative transmitter RF output power when transmitting, and input signal strength when receiving. The meter is illuminated when power is on.

2. **TX/RX INDICATOR:** The TX/RX light in the upper right corner of the front panel lights in red color when the microphone button is pressed and transmitter is in operation. It lights in green color when the microphone button is released and the receiver is in operation.

### **PUSH-TO-TALK MICROPHONE**

The receiver and transmitter are controlled by the push-to-talk switch on the microphone. Press the switch and the transmitter is activated. Release the switch to receive. When transmitting, hold the microphone about three inches from your mouth and speak at a normal voice level.

### **RECEIVE OPERATING PROCEDURE**

1. Place the PA-TX/RX switch in TX/RX position.
2. Turn the set on by turning the **VOLUME CONTROL** clockwise, past click.  
**NOTE:** Microphone must be plugged in for receiver to operate.
3. Set the **VOLUME CONTROL** to a comfortable level.
4. Set the Mode Selector Switch to the desired mode.
5. Listen to the background noise from the speaker. Turn the **SQUELCH CONTROL** slowly clockwise, until the noise just disappears. The Squelch is now properly adjusted. The receiver will remain quiet until a signal is received. Do not advance the control too far, or some of the weaker signals will not be heard.
6. Set the Channel Selector to the desired channel.
7. Adjust the **CLARIFIER** to clearly receive SSB or AM signals.

### **TRANSMIT OPERATING PROCEDURE**

1. Select the desired channel of transmission.
2. If the channel is clear, depress the push-to-talk switch on the microphone and speak in a normal voice.

### **WARNING**

Operation of this equipment requires a valid station license issued by the Department of Communications. Do not transmit with your equipment until you have a license.

### **MAINTENANCE AND ADJUSTMENT**

This transceiver is especially designed for the environment encountered in mobile installations. The use of all solid state circuitry and its light weight result in high reliability. Should failure occur, however, replace parts only with identical parts. Do not substitute.

**(NOTE:** When ordering parts, it is essential to specify the correct model number and serial number of the unit.)

# uniden®

## 12 MONTHS FULL WARRANTY

**WARRANTOR.** SANTRONIC AGENCIES PTY. LTD. 13 Garema Circuit, Kingsgrove NSW 2208 ("SANTRONIC").

**ELEMENTS OF WARRANTY.** SANTRONIC warrants, for the duration of this warranty, its UNIDEN Marine Product to be free from defects in materials and craftsmanship with only the limitation or exclusions set out below.

**WARRANTY DURATION.** This Warranty shall terminate and be of no further effect One (1) year after the date of original purchase of the Product or at the time the Product is (a) damaged or not maintained as reasonable and necessary, (b) modified, (c) improperly installed, (d) is repaired by someone other Warrantor for a defect or malfunction covered by this Warranty, or (e) used in a manner or purpose for which the Product was not intended.

**PARTS COVERED.** This Warranty covers all components of the Products.

**STATEMENT OF REMEDY.** In the event that the Product does not conform to this Warranty at any time while this Warranty is effective, Warrantor will repair the defect and return it to you prepaid, without charge for parts, service, or any other costs incurred by Warrantor or its representatives in connection with the performance of this Warranty. In addition, if the Product contains a defect or malfunction which is not repaired after a reasonable number of attempts by Warrantor to repair the Product, the Product or defective component will at our discretion, will be replaced without charge, when the defective product is delivered to the warrantor at 13 Garema Circuit Kingsgrove NSW 2208 free and clear of all liens and encumbrances. Please note that while the Product will be remedied under this Warranty without charge. **THIS WARRANTY DOES NOT COVER OR PROVIDE FOR THE REIMBURSEMENT OR PAYMENT OF INCIDENTAL OR CONSEQUENTIAL DAMAGES.**

Some states do not allow this exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

**PROCEDURE FOR OBTAINING PERFORMANCE OF WARRANTY.** In the event that the Product does not conform to this Warranty, the Product should be shipped prepaid to Warrantor at 13 Garema Circuits Kingsgrove NSW 2208. **THE ORIGINAL OR COPY OF THE SALES RECEIPT OR OTHER VALID EVIDENCE OF THE DATE OF THE ORIGINAL PURCHASE MUST ACCOMPANY THIS PRODUCT.**

**LEGAL REMEDIES.** This Warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

# Santronic

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